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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,397	11/24/2003	Christopher John Capece	3-12	4116

7590 06/22/2007

Docket Administrator (Room 3J-219)
Lucent Technologies Inc.
101 Crawfords Corner Road
Holmdel, NJ 07733-3030

EXAMINER	
PHU, SANH D	

ART UNIT	PAPER NUMBER
2618	

MAIL DATE	DELIVERY MODE
06/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/720,397	CAPECE ET AL.	
	Examiner	Art Unit	
	Sanh D. Phu	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,5-15,17,19 and 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5-15,17,19,20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive to the Amendment filed on 5/7/07.

Accordingly, claims 1, 3, 5-15, 17, 19 and 20 are currently pending; and claims 2, 4, 16 and 18 are canceled.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 3, 8, 14, 15 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Stephens et al (2006/0140161), newly-cited.

-Regarding to claim 1, Stephens et al discloses a wireless transceiver (204) (see figure 3, [0034-0043]) comprising:

at least one base band unit (201);

at least one radio frequency unit (200); and

a wireless link (Remote Link) for wirelessly coupling the baseband unit with the radio frequency unit (see [0035, 0036]),

wherein at least one of the base band unit and the radio frequency unit comprises a transmitter-receiver (comprising (302) or (304)) for supporting the wireless link; and the transmitter-receiver comprises at least one of:

a demultiplexer for demultiplexing a received signal and a multiplexer for multiplexing a signal to be transmitted (see [0042]);

an authenticator for authenticating the received signal and an deauthenticator for deauthenticating the signal to be transmitted (see [0054]); and

a decryptor for decrypting the received signal and an encryptor for encrypting the signal to be transmitted (see [0041, 0054]).

-Regarding to claim 3, Stephens et al discloses that the transmitter-receiver (comprising (302)) comprising a transceiver (302), (considered here equivalent with the limitation "broadcast transceiver"), (see [0022, 0043]).

-Regarding to claim 8, in Stephens et al, the at least one radio frequency unit inherently comprises an RF antenna for supporting the wireless link of radio communication between the at least one radio frequency unit and the at least one base band unit (see [0022, 0035]).

-Regarding to claim 14, as similarly applied to claims 1, 3 and 8 set forth above and herein incorporated, Stephens et al discloses a base transceiver (204) (see figure 3, [0034-0043]) comprising:

at least one base band unit (201);

at least one radio frequency unit (200); and

a wireless link (Remote Link) for wirelessly coupling the baseband unit with the radio frequency unit (see [0035, 0036]),

wherein at least one of the base band unit and the radio frequency unit comprises a transmitter-receiver (comprising (302) or (304)) for supporting the wireless link; and the transmitter-receiver comprises at least one of:

a demultiplexer for demultiplexing a received signal and a multiplexer for multiplexing a signal to be transmitted (see [0042]);

an authenticator for authenticating the received signal and an deauthenticator for deauthenticating the signal to be transmitted (see [0054]); and

a decryptor for decrypting the received signal and an encryptor for encrypting the signal to be transmitted (see [0041, 0054]).

-Regarding to claim 15, Stephens et al discloses that the wireless link wirelessly coupled an RF section (comprising (RF Filter, RF switch, 32MHz Crystal)) of the radio (200) with the at least one base band unit (see figure 3).

-Claim 17 is rejected with similar reasons set forth for claim 3.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stephens et al.

-Regarding to claim 5, Stephens et al does not teach that the at least one base band unit comprises a multi-headed air interface antenna for supporting the wireless link, as claimed.

However, in Stephens et al, the at least one base band unit inherently comprises an interface antenna for supporting the wireless link (see [0022, 0035]).

Further, implementing an interface antenna with a multi-headed air interface antenna for supporting a wireless link is well-known in the art. For instance, Stephens et al teaches using a multi-headed air interface antenna (114) for supporting a wireless link (see figure 1, [0028]).

Since Stephens et al does not teach in detail how the interface antenna is implemented for supporting the wireless link between the at least one base band unit and the at least one radio frequency unit, it would have been obvious for a person skilled in the art to implement Stephens et al in such a way that for supporting the wireless link between the at least one base band unit and the at least one radio frequency unit, the interface antenna is implemented with a

multi-headed air interface antenna, so that the interface antenna would be provided as required.

-Regarding to claim 6, as applied to claim 5, Stephens et al teach that the multi-headed air interface antenna is configurable to comprise at least one antenna head per sector (see (114) of figure 1).

6. Claims 7, 9-13, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stephens et al in view of Schmidt (7,187,663), newly-cited.

-Regarding to claim 7, Stephens et al does not teach that the multi-headed air interface antenna is operative to support a data rate of at least 100 Mbps, as claimed.

However, Stephens et al teaches that the invention can utilize one among applicable wireless interfaces for the short range wireless link between the at least one base band unit and the at least one radio frequency unit, (see [0022, 0042, 0044]).

Schmidt teaches that an interface using IEEE 802.11A standard of 5 GHz can be used as one among alternatives for a short-range wireless link (see col. 1, lines 16-23).

It would have been obvious for a person skilled in the art to alternatively implement Stephens et al in such a way that the at least base band unit would use IEEE 802.11A standard of 5 GHz, as taught by Schmidt, for support the wireless link between the at least one base band unit and the at least one radio frequency unit, so that the implementation would become another Stephens et al embodiment.

In such the implementation, the multi-headed air interface antenna must also be implemented for supporting IEEE 802.11A standard of 5 GHz, so that wireless link would be provided as required.

With such the implementation, Stephens et al in view of Schmidt teaches the at least base band unit and the multi-headed air interface antenna can offer a data rate of 100 MHz (see Schmidt, col. 1, lines 16-23).

-Regarding to claim 9, Stephens et al does not teach that the RF antenna is operative to support a data rate of at least 100 Mbps, as claimed.

However, Stephens et al teaches that the invention can utilize one among applicable wireless interfaces for the short range wireless link between the at

least one base band unit and the at least one radio frequency unit, (see [0022, 0041, 0042, 0044]).

Schmidt teaches that an interface using IEEE 802.11A standard of 5 GHz can be used as one among alternatives for a short-range wireless link (see col. 1, lines 16-23).

It would have been obvious for a person skilled in the art to alternatively implement Stephens et al in such a way that the at least radio frequency unit would use IEEE 802.11A standard of 5 GHz, as taught by Schmidt, for support the wireless link between the at least one base band unit and the at least one radio frequency unit, so that the implementation would become another Stephens et al embodiment.

In such the implementation, the RF antenna must also be implemented for supporting IEEE 802.11A standard of 5 GHz, so that wireless link would be provided as required.

With such the implementation, Stephens et al in view of Schmidt teaches the at least radio frequency unit including the RF antenna can offer a data rate of 100 MHz (see Schmidt, col. 1, lines 16-23).

-Regarding to claim 10, as similarly applied to claims 1, 3 and 8 set forth above and herein incorporated, Stephens et al discloses a wireless transceiver (204) (see figure 3, [0034-0043]) comprising:

at least one base band unit (comprising (201));

at least one radio frequency unit (200); and

a wireless link (Remote Link) for wirelessly coupling the baseband unit with the radio frequency unit (see [0035, 0036]),

wherein at least one of the base band unit and the radio frequency unit comprises a transmitter-receiver (comprising (302) or (304)) for supporting the wireless link.

Stephens et al does not teach that the at least one base band unit comprises at least two base band unit printed circuit boards, and a base band unit wireless link for wirelessly coupling the at least two base band unit printed circuit boards to each other, as claimed.

However, Stephens et al teaches that the at least base band unit is configurable to comprises a first circuit module (201), a second circuit module (203), and a base band unit wireless link (Remote link) for wirelessly coupling

the first circuit module with the second circuit module (see figures 7, 8, [0051]).

Schmidt teaches that a circuit module can be fabricated on a single silicon integrated chip, (namely, on a single printed circuit board), (see col. 3, line 54 to col. 4, line 33).

Since Stephens et al does not teach in detail how the first circuit module (201) and the second circuit module (203) are fabricated, it would have been obvious for a person skilled in the art to implement Stephens et al in such a way that each of the first circuit module (201) and the second circuit module (203) would be fabricated on a single printed circuit board, as taught by Schmidt, so that the first circuit module and the second circuit module would be individually provided as required.

With such the implementation, Stephens et al in view of Schmidt teaches the first circuit module and second module associated with their printed circuit boards, (considered here equivalent with the limitation "two base band unit printed circuit boards", and the base band unit wireless link (Remote link), (considered here equivalent with the limitation "base band unit wireless link for

wirelessly coupling the at least two base band unit printed circuit boards to each other", as claimed.

-Regarding to claim 11, Stephens et al in view of Schmidt teaches that the baseband unit can alternatively utilize IEEE 802.11a for wireless communications between the at least one base band unit and the at least one radio frequency unit (see Stephens et al, [0022, 0041, 0042]), wherein the IEEE 802.11a can inherently offer a range of 500 meters, (for clarifying the inherency, see Chang (2005/0144318), [0031]).

-Regarding to claim 12, Stephens et al discloses a wireless transceiver (204) (see figure 7, [0044-0047, 0051]) comprising:

at least one base band unit (comprising (203));

at least one radio frequency unit (200, 201); and

a wireless link (Remote Link) for wirelessly coupling the baseband unit with the radio frequency unit,

wherein at least one of the base band unit and the radio frequency unit comprises a transmitter-receiver (comprising (Access Dot Remote Link driver)) for supporting the wireless link.

Stephens et al does not teach that the at least radio frequency unit comprises at least two radio frequency unit printed circuit boards, and a radio frequency wireless link for wirelessly coupling the at least two radio frequency unit printed circuit boards to each other, as claimed.

However, Stephens et al teaches that the at least radio frequency unit is configurable to comprises a first circuit module (200), a second circuit module (201), and a radio wireless link (Remote link) for wirelessly coupling the first circuit module with the second circuit module (see figures 7, 8, [0051]).

Schmidt teaches that a circuit module can be fabricated on a single silicon integrated chip, (namely, on a single printed circuit board), (see col. 3, line 54 to col. 4, line 33).

Since Stephens et al does not teach in detail how the first circuit module and the second circuit module are fabricated, it would have been obvious for a person skilled in the art to implement Stephens et al in such a way that each of the first circuit module and the second circuit module would be fabricated on a single printed circuit board, as taught by Schmidt, so that the first circuit

module and the second circuit module would be individually provided as required.

With such the implementation, Stephens et al in view of Schmidt teaches the first circuit module and second module associated with their printed circuit boards, (considered here equivalent with the limitation "two radio frequency unit printed circuit boards", and the radio wireless link (Remote link), (considered here equivalent with the limitation "radio frequency unit wireless link for wirelessly coupling the at least two radio frequency unit printed circuit boards to each other", as claimed.

-Regarding to claim 13, Stephens et al in view of Schmidt teaches that the radio frequency wireless link can alternatively utilize IEEE 802.11a for wireless communications between the at least one base band unit and the at least one radio frequency unit (see Stephens et al, [0041, 0042]), wherein the IEEE 802.11a can inherently offer a range of 500 meters, (for clarifying the inherency, see Chang (2005/0144318), [0031]).

-Regarding to claim 19, Stephens et al does not teach that the at least one base band unit comprises a multi-headed air interface antenna for

supporting the wireless link, the muti-headed air interface antenna having at least one antenna head per sector and operative to support a data rate of at least 100 Mbps, as claimed.

However, in Stephens et al, the at least one base band unit inherently comprises an interface antenna for supporting the wireless link (see [0022, 0035]).

Further, implementing an interface antenna with a multi-headed air interface antenna for supporting a wireless link is well-known in the art. For instance, Stephens et al teaches using a multi-headed air interface antenna (114) for supporting a wireless link (see figure 1, [0028]).

Since Stephens et al does not teach in detail how the interface antenna is implemented for supporting the wireless link between the at least one base band unit and the at least one radio frequency unit, it would have been obvious for a person skilled in the art to implement Stephens et al in such a way that for supporting the wireless link between the at least one base band unit and the at least one radio frequency unit, the interface antenna is implemented with a

multi-headed air interface antenna, so that the interface antenna would be provided as required.

Stephens et al further teaches that the multi-headed air interface antenna is configurable to comprise at least one antenna head per sector (see (114) of figure 1).

Stephens et al does not teach that the multi-headed air interface antenna is operative to support a data rate of at least 100 Mbps.

However, Stephens et al teaches that the invention can utilize one among applicable wireless interfaces for the short range wireless link between the at least one base band unit and the at least one radio frequency unit, (see [0022, 0042, 0044]).

Schmidt teaches that an interface using IEEE 802.11A standard of 5 GHz can be used as one among alternatives for a short-range wireless link (see col. 1, lines 16-23).

It would have been obvious for a person skilled in the art to alternatively implement Stephens et al in such a way that the at least base band unit would use IEEE 802.11A standard of 5 GHz, as taught by Schmidt, for support the

wireless link between the at least one base band unit and the at least one radio frequency unit, so that the implementation would become another Stephens et al embodiment.

In such the implementation, the multi-headed air interface antenna must also be implemented for supporting IEEE 802.11A standard of 5 GHz, so that wireless link would be provided as required.

With such the implementation, Stephens et al in view of Schmidt teaches that the at least base band unit including the multi-headed air interface antenna can offer a data rate of 100 MHz (see Schmidt, col. 1, lines 16-23).

-Regarding to claim 20, Stephens et al does not teach that the at least radio frequency unit comprises an RF antenna for supporting the wireless link, the RF antenna operative to support a data rate of at least 100 Mbps, as claimed.

However, in Stephens et al, the at least radio frequency unit inherently comprises an interface RF antenna for supporting the wireless link (see [0022, 0035]).

Stephens et al does not teach that the interface RF antenna is operative to support a data rate of at least 100 Mbps.

However, Stephens et al teaches that the invention can utilize one among applicable wireless interfaces for the short range wireless link between the at least one base band unit and the at least one radio frequency unit, (see [0022, 0042, 0044]).

Schmidt teaches that an interface using IEEE 802.11A standard of 5 GHz can be used as one among alternatives for a short-range wireless link (see col. 1, lines 16-23).

It would have been obvious for a person skilled in the art to alternatively implement Stephens et al in such a way that the at least radio frequency unit would use IEEE 802.11A standard of 5 GHz, as taught by Schmidt, for support the wireless link between the at least one base band unit and the at least one radio frequency unit, so that the implementation would become another Stephens et al embodiment.

In such the implementation, the interface RF antenna must also be implemented for supporting IEEE 802.11A standard of 5 GHz, so that wireless link would be provided as required.

With such the implementation, Stephens et al in view of Schmidt further teaches that the at least radio frequency unit including the interface RF antenna can offer a data rate of 100 MHz (see Schmidt, col. 1, lines 16-23).

Response to Arguments

7. Applicant's arguments filed on 5/7/07 have been fully considered. However, upon further consideration, claims 1, 3, 5-15, 17, 19 and 20 are deemed not allowable because of reasons set forth above in this Office Action.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanh D. Phu whose telephone number is (571)272-7857. The examiner can normally be reached on M-Th from 7:00-17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on (571) 272-

4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sanh D. Phu
Patent Examiner
Division 2618

5/31/07

SP

SANH D. PHU
PATENT EXAMINER